

Neglected crops: proving the potential

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This pack has been compiled by WRENmedia with funding from the UK Government's Department for International Development (DFID). The views expressed are not necessarily those of DFID.

The distribution of this pack has been funded by the Technical Centre for Agricultural and Rural Cooperation (CTA).





CTA is funded by the
European Union

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Taking a fresh look

National treasures

Jackie Hughes

The World Vegetable Centre (AVRDC)



Lazarus Laiser

Suggested introduction

Every nation has its national treasures. Egypt has its pyramids; Zimbabwe and Zambia share the Victoria Falls and Malawi has its great lake. But according to Dr Jackie Hughes, who is Deputy Director-General for Research at the World Vegetable Centre, every country in the world has national treasures which are both nutritional and known for helping fight off disease. They are the plants that were once an important part of our diets but have fallen out of favour as other crops have taken over.

Talking with **Lazarus Laiser**, it is clear how much Dr Hughes wants us all to realise what we could lose if we don't take a fresh look at what we have. Lazarus Laiser began by asking whether the world is neglecting many useful crops.

Track 1

In "Has the world neglected...
Out ...your indigenous vegetables."
Duration 2'54"

Suggested closing announcement:

That was Lazarus Laiser talking to Dr Jackie Hughes, Deputy Director-General for Research at the World Vegetable Centre. What can you do to bring our traditional cereals and grains back on to the kitchen table?

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Transcript

Laiser *Has the world neglected a lot of crops?*

Hughes Yes, the world has neglected many crops. They are the underutilised crops of the world and for vegetables, there are many thousands of underutilised vegetables around the world, particularly in Africa, which are with local people in poor areas.

Laiser *Is that a problem?*

Hughes I think it's an opportunity. Because poor people do have access to the foods, but in the urban and peri-urban areas those neglected vegetables are not found because people want tomatoes and cabbage and carrots, not the leafy greens and African eggplants which are a part of traditional diets.

Laiser *Now there is a movement to bring back into fashion those neglected crops. Why is that?*

Hughes In particular because they are very good for nutrition, they have a lot of nutritional benefits plus they grow in marginal areas. So if

the policy makers are considering climate change and an expansion of droughts or severe weather effects, those indigenous vegetables are much more resilient.

Laiser *How is that done?*

Hughes In environments such as this symposium, we try and sensitise policy makers and the scientists to work on particular indigenous crops which are of benefit to people, not just of scientific interest. Many of them have very interesting characteristics, but most of them are good for certain uses and we need to sensitise not only scientists but governments and other institutions on that.

Laiser *What could be the benefits for that?*

Hughes The benefits of indigenous vegetables are one, nutrition, and you get the micro-nutrients from those vegetables which are good for all of us so fewer people will die of iron deficiency, vitamin A and iodine deficiency. But in addition to that, markets - opportunities for alleviating poverty. If you can grow indigenous vegetables you eat it yourself, you can also sell it. And then there is the processing before you sell, post-harvest processing. So you add value, and that added value comes back to those poor people who are putting their time and energy into that.

Laiser *Can you give some examples of that?*

Hughes Well if you look at something like the nightshade in Tanzania, that is something which had gone off the tables, out of the meals in the urban areas, but in the villages people still ate it. So now, you can actually go and buy nightshade in Arusha and Dar es Salaam, so everybody can eat it, they get their minerals. But to do that you also need to increase the seed sector. That has to be stronger because without seeds you can't plant it, grow it and sell it. So it is a way of increasing the whole economy through your national treasures, your indigenous vegetables. *End of track*

Taking a fresh look

International viewpoints on the world's neglected crops



Wambi Michael

International vox pop compiled by Wambi Michael

Suggested introduction

We are blessed in Africa by great variety of indigenous fruits, nuts and leafy green vegetables. These wonderful foods are packed with vitamins and minerals that help to keep the human body in good health. A lot of them are also resistant to pests, and can tolerate tough conditions like drought and floods. But, like indigenous crops the world over, they have been neglected and even forgotten. Why?

Our Ugandan correspondent **Wambi Michael** was in Arusha at an international symposium on neglected crops. He asked scientists from Nigeria, Belgium, Sri Lanka and Rwanda, to explain what could be done to bring neglected crops back and, firstly, how they went out of fashion in the first place.

Track 2

In	"We just have to develop interest ...
Out	... and make them more valuable."
Duration	4'00"

Suggested closing announcement:

Odunayo Adeboye encouraging governments in Africa to invest in the continent's neglected crops. The report featured participants of a recent international meeting on neglected crops held in Arusha, Tanzania.

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Transcript

Adeboye

We just have to develop interest in discussing the topic because underutilised crops have been part of our culture for hundreds of thousands of years but you just find out that in recent times, people are no longer interested and when people are not interested the plants will go into extinction. Threat precedes extinction and when these plants go into extinction you lose your

culture. So there is that necessity to maintain culture. You develop pride in what you have, not in what you import.

- Jaenicke** I am often asked, "Aren't underutilised plants underutilised for a reason?" and I always say, "Well, there might have been a reason in the past but maybe that reason has gone." Many plants have been neglected in the past because processing was very difficult. Maybe they had a very hard seed coat or they had some bitter flavour but nowadays I think it is important to recognise that some of these obstacles have been overcome. So we should have another fresh look at the actual genetic diversity that is growing in our back gardens and in our farmers' home gardens, to see whether there is not much more that can be used.
- Karhgomba** A lot of emphasis has been focused on exotic plant species at the expense of our own indigenous fruit trees. You find that there have been a lot of improvements and research done on mangoes and other oranges and things that are exotic to our native land but it is now important that we get back to our own.
- Adeboye** The problem is about westernisation, especially in Africa. The colonial system brought into our system a kind of introduction of some crops from all over the world and so our people in that sense forgot about our own crops. Why? Because people who brought these crops promoted them and our people, because of lack of education, embraced the crops to the detriment of their own crops.
- Damme** Man's diet consists of only a few species and man needs a broad range of food because we need a broad range of nutrients, vitamins, all kinds of nutrients that in those restricted numbers of vegetables that we are eating now are not always there.
- Karhgomba** Underutilised vegetables are very important. Looking at underutilised vegetables, nuts and fruits they are very nutritious, our science has proved. So various chemical tests have been done and they have been found to be very rich in chemicals such as calcium, iron and other things. So it is very, very important that we go back to the natives and utilise our species.
- Jaenicke** I think climate change is affecting the cropping patterns of many of the crops that people use and therefore it is extremely important again to look at the diversity that is available and come back to some of the so called "forgotten" and "underutilised" plants, because many of them actually can withstand droughts or floods much better than the commercial crops. There are good examples from research, that also genes that are available in underutilised traditional plants can then be introduced through breeding efforts into some of the commodity crops. So we have a very, very valuable heritage that we should not lose and that is why it is important to look at the value of underutilised crops.
- Karhgomba** You remember that in former times elder generations have been using these plants to survive from hunger, to fight against disasters and we need to revitalise them for our future generations.

Adeboye

Governments in Africa under the auspices of the African Union through the New Partnership for African Development should initiate a programme of networking among African research institutes, so that we add value to these underutilised crops, process foods from these underutilised crops and then extend this to the people, and I am sure people will embrace it. I will give you an example. Soya bean is not an African crop, it was introduced to Africa. People embraced it and they are now using it as a source of milk. So if we promote our own crop through extension and through our governments, we can then popularise these crops and make them more valuable. *End of track.*

Current uses

Mighty baobab

Professor Gordana Kanjac-Berisavljevic
Sustainable Land Management, Ghana



Benedict Komba

Suggested introduction

Of all African trees, perhaps the baobab is the most wonderful. These mighty trees can live for as long as five thousand years. The baobab has provided us with food for generations. In fact its seeds were found in the stomach of a man who lived on earth thirty thousand years ago. This shows that this tree has long been an important source of food. But despite its long history, eating the baobab has been going out of fashion.

However there are signs it is making a comeback, with growing demand in European markets and in semi-arid areas of Africa. Professor Gordana is team leader of a sustainable land management project in northern Ghana. She is enthusiastic about baobab, and she explained to **Benedict Komba** where in Ghana, and when, the baobab is especially important.

Track 3

In "In northern parts of Ghana...
Out ...improve life of the rural people."
Duration 4'04"

Suggested closing announcement:

A report on the baobab tree, which has many uses and can live for more than 5000 years.

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Transcript

Berisavljevic In northern parts of Ghana very close to Burkina Faso there is a hungry period every year between January and June. A hungry season means that people subsist on two meals a day and they reduce to only one. It is in June, towards the end, that early millet is harvested and then the diet improves but before that period it is really very difficult and people collect products from the wild.

Komba *How can baobab help to feed people in Ghana?*

Berisavljevic We have evidence of research for over seventy years that in these particular poor rural communities baobab is always used to support feeding, as part of the diet in this hungry season. This is when all parts of the baobab tree are used to supplement the diet.

Komba *May you describe the nutrients that can be available in baobab?*

Berisavljevic Baobab is very rich in vitamins. It is now increasingly becoming a medicinal plant. The European market is highly interested in imports of baobab and there are already very strict regulations on

what baobab products are to be imported. Particularly interesting is the pulp from the fruit, which is dried and used in a variety of energy drinks, snacks.

Komba *And if a person wants to know how does a baobab tree look like, how can you describe it?*

Berisavljevic It is probably the largest tree in your environment, it can be five metres wide and it is very old. It normally, some people describe it as having roots upside, up in the air, when there are no leaves on it. It can live up to 5,000 years and is generally available everywhere in sub-Saharan Africa in drier environment.

Komba *Which parts of the baobab are mostly used?*

Berisavljevic In our communities where I did my study people use everything, they use each and every part of the tree. The bark is used as the firewood for local beer production. Roots are used for medicinal and spiritual purposes. The fresh leaves are used as a sauce, dry leaves are sold, fruit is eaten fresh as a snack. Pulp is dried and then added to the local staple food, and seeds are cracked and mixed with the local leafy vegetable. So there is really no part that is not useful in the traditional system.

Komba *If we come to the fruits themselves, how do they look like? Are they so big or so small and what about their seeds?*

Berisavljevic They are not too big, they are not too small, their size is maybe comparable to the smaller types of papaya in size. And they are a little bit difficult to crack but inside is a delicious pulp, which especially children like as a snack. That pulp surrounds seeds which are more or less black and then they are also used.

Komba *And how do the seeds or the fruits taste?*

Berisavljevic They taste very nice. They can be added to ice cream, and then the people also use it for porridge, for traditional meals and so on. Nobody complains about the baobab flavour! It is very nice.

Komba *It seems that this baobab is among those neglected plants, so what do you do in your country to popularise it?*

Berisavljevic Yes we are trying to show people that they can add value and process and export this product because there is a lot of market and then that will probably improve life of the rural people. *End of track.*

Current uses

Nutritional benefits of neglected, traditional vegetables



Winnie Onyimbo

Judith Kimiywe

Kenyatta University, Kenya

Suggested introduction

Many African meals now include exotic vegetables like carrot, tomato, onion and cabbage. These are crops that were introduced here and have really taken off. But all over Africa, there are nutritionists, scientists and researchers who are trying to convince us to kick out the carrots, turn down the tomatoes and welcome back indigenous leafy vegetables onto our plates instead. In Kenya no one is more enthusiastic in this message than Judith Kimiywe from Kenyatta University. As **Winnie Onyimbo** found out when she met her, Dr. Kimiywe's love of traditional but neglected crops began when she was a very small child.

Track 4

In "When did you discover...
Out ... treatment of certain diseases.
Duration 6'12"

Suggested closing announcement:

That was Dr Judith Kimiywe from Kenya explaining to Winnie Onyimbo how traditional leafy vegetables are slowly making their way into our farms, markets and eventually onto our plates.

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Transcript

Onyimbo

When did you discover that traditional vegetables have special health benefits?

Kimiywe

I have always known about the benefits of traditional vegetables right from my early childhood when I was exposed to them by my grandparents. And this is because I was a sickly child and we thought the only remedy was to eat certain vegetables which they associated with the healing of some of the elements that I was suffering from, like stomach aches, tonsils and even later in life, ulcers. My background as a nutritionist has actually triggered my interest in the traditional foods as the best source for availing the micronutrient deficiencies which have been with us for a long, long time, particularly of interest are foods that are rich in vitamin A or beta carotene, iron and iodine and zinc, which have featured prominently in our health programmes. Those are some of the things that also triggered my interest in promoting traditional foods which I know have got a high potential for those nutrients.

- Onyimbo** *You talked of iodine and you talked of vitamins. How does this help in the body?*
- Kimiywe** Well one of the key things about micronutrients is that they provide preventative measure against very many key health conditions that people may suffer from.
- Onyimbo** *Give us two examples of out-of-fashion vegetables that are good for us to eat.*
- Kimiywe** There is a whole wide range of traditional vegetables but the most common ones that are on the market now are easily available and accessible to people and acceptable for the majority of the people that have had exposure to indigenous vegetables, include vegetables like the spider weed or the sweet potato leaves, cassava leaves and a whole range of other vegetables that are picked from the wild.
- Onyimbo** *I have a carrot and a tomato in my hands. What special benefits will I get from the traditional vegetables we have been talking about in comparison to the tomato and the carrot?*
- Kimiywe** These ones do not contain the green colour, the green matter which the vegetables have which also carry with it other nutrients that are not necessarily in the carrot and the tomato. Because of the nature of their composition as green leafy vegetables, they are carrying other substances that are also important in contributing towards the health of the individual, in different ways. Green leafy vegetables will contain a higher level of minerals such as iron and calcium and zinc compared to the carrot and the tomato.
- Onyimbo** *What is a proper way to cook the underutilised vegetables? I understand you can lose the nutrients by boiling them. How should someone cook them so that you don't lose any nutrients?*
- Kimiywe** We do not want prolonged cooking because too long a period of cooking beyond ten minutes usually interferes with the amount of available nutrients in that vegetable. And particularly if the vegetable is cooked in water and the water is thrown away. So what we are trying to do right now is to come up with recipes, agreeable recipes based on the traditional recipes but a little bit modified in terms of retention of nutrients. The other thing we are building on is the indigenous knowledge of what people used to do with these vegetables. One of the things they used to do was to combine different types of vegetables. And that way they make a mixture of vegetables. Now it is a good thing to do because each vegetable has got its own strength as far as the nutrient content is concerned. The other good thing was that traditionally in some communities they add coconut milk to the vegetables, or they add pounded groundnut powder or sesame powder, and some communities they add avocado pear that is mashed into the vegetables and that helps to enhance the vegetables in two ways. These additives provide a fat medium which is very important for the absorption and utilisation of the vitamin A. Essential fatty acids from the oil-based product are very important for protecting the body, for growth, for the smooth skin, for good eyes and for children for growth generally. These fat mediums are also good carriers of vitamin E, which is a key anti-oxidant in the body.
- Onyimbo** *In your opinion do you think these underutilised vegetables or neglected vegetables will be back in fashion? Back on our plates, back in our markets?*

Kimiywe

The promotion of these vegetables has created a very high demand, particularly in this area of going natural. Because of the very many diseases that have come up, cancer, is threatening right now, diabetes is another health condition that has made people look towards using natural foods. Things like TB, HIV/AIDS and many other illnesses, health conditions that have made people go back to use of traditional foods as a way of managing, controlling or preventing these illnesses. Thanks to the traditional medicine people, they are also emphasising the use of these foods when they are giving the remedies for treatment of certain diseases. *End of track.*

Current uses

Social aspects of neglected crops



Eric Kadenge

Erika Vohman, Oladele Idowu,
Gordana Kranjac-Berisavljevic
and Gus Le Breton

Suggested introduction

We use plants for very many different reasons: as food, to make money or in cultural ceremonies. It is the social aspects of plants, particularly the ones that are now neglected, that are often overlooked.

Coming up, four people - working in Latin America, West Africa and southern Africa - share the stories of farmers who have decided to spend time in their gardens, farms and forests to nurture plants that are considered neglected.

Track 5

In "My name is Erika Vohman ...
Outwe still have a very, very long way to go."
Duration 6'39"

Suggested closing announcement:

Those voices on the value and potential of neglected crops were brought to you by **Eric Kadenge**.

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Transcript

Vohman

My name is Erika Vohman. I am the Founder and Executive Director of the Equilibrium Fund. The maya nut tree is one of the largest trees in the rainforest. It grows to be about 45 metres tall. It is one of the most important species for biodiversity. Almost all the wildlife in the rainforest eat the maya nut seed and it also happens to be a nutritious, delicious and native food that can be harvested by rural communities for food and income.

- Oladele** I am Oladele O Idowu from the University of Ibadan, Nigeria. I work on neglected food crops, contribution to household food security and health among rural dwellers in the rural states of Nigeria. Bitter Kola is found on farmlands and then at some other times is propagated and once it starts fruiting a lot of fruit can be obtained and it has a very long shelf life.
- Berisavljevic** My name is Gordana Kranjac-Berisavljevic and I work with the University for Development Studies in northern Ghana in the savannah area where a lot of neglected crops are grown. There are two interesting crops. One is African rice, *Oryza glaberrima* which is grown mostly by women in the northern part of Ghana and then also processed by women. It is a major women's industry. The second interesting crop is yam which is grown solely by men.
- Le Breton** My name is Gus Le Breton, I am from PhytoTrade Africa which is the Southern African Natural Products Trade Association and I am based in Zimbabwe. A species that we have been working with for the last several years is marula, and the marula tree is found, it is spread all over Africa but particular concentrations in southern Africa and it is a traditional fruit which is harvested mostly by women for eating and also for brewing beer.
- Vohman** The women of Central America and Mexico are able to harvest the seed from the maya nut tree and use that for food and also as a source of income.
- Oladele** Households are generally involved because apart from the propagated ones, most of these are trees that have been there for years so they serve a purpose for the household because maybe it is located on the family land, on individual land and even sometimes on individual land there are other parts of the family or the household that can still lay claim to it.
- Berisavljevic** People grow yam not necessarily only for commercial reasons but for various cultural, spiritual and religious reasons and they strongly believe that women can only sell yam but they cannot cultivate it because traditional knowledge is embodied in it. It has also to do with the social structure where, as you grow older, you gradually learn more and more about how to cultivate yam.
- Le Breton** In Namibia, for the women in northern Namibia, it is a very big deal every year when they harvest marula. It is a business that is pretty much exclusively controlled by women. In many countries in southern Africa there is a very high cultural value associated with the species and there are special marula ceremonies during the harvesting season which is about two or three months, January, February, March.
- Vohman** Most of the women in Central America and Mexico that are working with the maya nut are marketing it locally, because they are not so interested in dealing with all the paperwork and legalities involved in export.
- Oladele** Women are still able to market and get income but essentially the household benefits from these crops in terms of the consumption of the crops and then incomes that they are able to make from it. Most of the leaves or the fruits that are harvested are taken to local markets for sale, and income derived can be used in paying school fees, for social meetings and for some other things.

- Berisavljevic** Increasingly yam is exported from Ghana to the foreign markets and specially to diaspora. There are a lot of Ghanaians living all around the world. Much more yam is grown for domestic use, it is grown for social reasons, like there are special big types of yam that you give to your father-in-law.
- Le Breton** They formed a cooperative and they have built their own factory and they have oil processing facilities at this factory. So the producers sell the kernel to the cooperative, the cooperative processes it into oil and the oil is then sold through export channels to international cosmetic companies.
- Vohman** I think when we are working with underutilised species and also with rural communities it is important to be very patient because rural communities are often in a process of development. It is as much as a personal development as economic development, and personal human development can often be very slow, especially when communities are not used to taking charge of their lives.
- Oladele** Things that are regarded useless or weeds or unusable can tapped into, either as human foods or animal feeds or things like that.
- Berisavljevic** There are many more crops we should grow than those we are actually using and probably the culture and the social set up of people has a major role to play and we should try to promote what we locally have.
- Le Breton** I think the key lesson is not to rush into it, not to try to do too many things at once, keep it simple, work in a steady direction towards a single goal and ultimately we can achieve tremendous things. Because this marula for example, one day we might be able to sell two or three thousand tonnes of marula oil a year, into the cosmetics industry but at the moment we are selling probably less than ten tonnes a year. So we still have a very, very long way to go. *End of track.*

Current uses

Why Tanzania is ahead in traditional vegetables



Wambi Michael

Jarret Mhango

Mzuzu University, Malawi

Suggested introduction

All African countries have traditional leafy vegetables. In many places these have been neglected, but not in Tanzania. In Arusha – which is in the north of the country - the last ten years has seen a steady increase in trade in a whole range of traditional vegetables in the town's biggest market. So why is Tanzania ahead?

Wambi Michael, a journalist from Uganda, went to the busy Kilombero market one late afternoon with Jarret Mhango, a university lecturer from Malawi who specializes in neglected crops. As they walked together between tables stacked high with lovely vegetables, they were amazed at the quantity of deep green leaves all bundled ready for sale.

Track 6

In SFX Market. "So we are now in the middle ...
Out ...Thank you."
Duration 6'14"

Suggested closing announcement:

Wambi Michael and Jarret Mhango, who were visiting Arusha's Kilombero market.

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Transcript

SFX Market.

Michael *So we are now in the middle of Kilombero Market in Arusha.*

Mhango We came to see what it is like here, especially in terms of what underutilised plants are being sold on the market.

Michael *What have you observed so far?*

Mhango It is amazing and it is a wonderful experience for me and I was here about ten years ago and I can see a tremendous change. There is so much African indigenous vegetables being sold, much more than I have ever seen anywhere before in Africa.

Michael *How do you call this one in Malawi?*

Mhango In Malawi this one is called *bonongwe*, but it is *Amaranthus*.

Michael *For us in Uganda we call it dodo. How nutritious is dodo?*

Mhango It is very rich in vitamins, especially the carotene because you see it is a very deep green. But it also has a lot of mineral salts like calcium, much, much more than even you would take from a cabbage.

Michael *Which type of people take these vegetables?*

Mhango I would say things are changing. In the past it was for the traditional people, the poor people in the village but I would not say so today. You see they are here for sale, who buys vegetables? It is people who have the money. So I am sure things are changing, it is for everybody.

Michael *And we are here at another stall which has potato leaves. In Uganda most communities do not eat potato leaves. Do you in Malawi eat potato leaves?*

Mhango Yes in Malawi potato leaves are a delicacy, but I have not seen them so much being sold as they are here. People normally just pluck from their own garden and eat.

Michael *Is that one of the differences you have noticed between Arusha and Malawi?*

Mhango Very much, they do not know that this is money in Malawi. They prefer to just eat from the garden; and this is nightshade. African nightshade.

Michael *In my village it is called isufa, but it is sour. Most people do not eat it.*

Mhango And that is what it is, and that is what we like about it.

Michael *What is good with that one?*

Mhango It is highly nutritious, it has its own peculiar flavour, the nightshade flavour I would say, yes.

Michael *Over there we have cassava leaves. Do you in Malawi eat cassava leaves as vegetables?*

Mhango Yes in Malawi, I would say in Malawi and Tanzania we have a lot of similarities. Cassava leaves are eaten as a vegetable, it is a delicacy to many communities and it is a good vegetable. But the selling bit is what I find it very difficult to understand here because in Malawi you do not see people really selling these indigenous vegetables as much as I have seen here.

Michael *Jarret can you take me over there where we have other types of vegetables. In Kampala we have these ones, do you have these ones in Malawi too?*

Mhango Yes this is the African eggplant. We have it, but I understand this is even the improved type which has come from the World Vegetable Centre in Tengeru and I just feel like I should just take some home because we do not have. Ours are the bitter type, the old traditional ones but I hear this is an improved type. But it is an African eggplant.

Michael *We also have this one, it is called amalakwang. What is this one in Malawi?*

Mhango In Malawi we call this *terere*.

Michael *Terere.*

Mhango *Terere*, it is the sliminess yes, so this is called *terere* in my country.

Michael *Is it delicious?*

Mhango Highly delicious. We can prepare it just like another vegetable but sometimes people add the bicarbonate of soda to it, which is not very good for nutrition anyway.

- Michael** *So how do you prepare it, the normal way of preparing it?*
- Mhango** The normal, the traditional way is to add bicarbonate of soda and some tomato, that is it, you fix it. So it gets that sliminess. But now we are encouraging people to fry it, add a bit of, if you do not have cooking oil you may simply cut your onions and tomato and mix them and boil, it will be ok.
- Michael** *Jarret you have been here for four days, have you been eating vegetables?*
- Mhango** I have eaten some of these but I wish we had eaten more of the indigenous vegetables. Because we are put up at the hotel, I do not know what happens, they do not feed you the materials that are supposed to be traditional as these are.
- Michael** *So you have toured Kilombero Market. What have you learnt most?*
- Mhango** It is a good market. It was not like this ten years ago. Well organised, quiet. I can see people are very orderly, there is no noise. It is a good market.
- Michael** *It seems like there is some sort of segregation. You find this side there is improved vegetables then the other side we see these indigenous here.*
- Mhango** Yes I think it is a matter of choice. They are giving people the choice to choose. If they want to go that way they go and if they want to come this side they come. But one thing that has encouraged me the most is the women are at the heart of it. You can see most of these vegetables are being sold by the women.
- Michael** *Where are the men in the market?*
- Mhango** I believe the men, they are saying 'radios' or whatever elsewhere. They believe that the indigenous vegetables are for the women but it is good money I guess for them. There is so much gender segregation pertaining to some of these things in such a way that there are certain activities which are basically taken as a woman's job. I am not surprised because traditionally, women have gone to gather these vegetables where they have been growing, because they have never been cultivated.
- Michael** *In Kampala too you find the tendency of women dominating sale of fresh vegetables. Maybe what is the situation like in Lilongwe?*
- Mhango** That one I would say it is the same in Malawi. Basically it is the women who sell vegetables, very few men if any. If a man is selling maybe it is cabbage or tomato, but not much more.
- Michael** *What can be done to promote indigenous vegetables?*
- Mhango** I think we need to go on the awareness campaigns. We need to teach people how to grow them. Because you know they used just to sprout spontaneously when the rains come and then they go but now people need to know that they can cultivate indigenous vegetables just like any other crop. So they should no longer be looked at that way. It is a crop just like any other crop, but even more important, because it is more nutritious. After all, it has the African taste.
- Michael** *Thank you very much.*
- Mhango** Thank you. *End of track.*

Even more potential

From weed to cash crop: Amaranth

Marion Nduta Ng'ang'a
Moi University, Kenya



Pius Sawa

Suggested introduction

For a long time, amaranth has been considered as a stubborn weed in farmers' fields and food for the poor during hungry times. But now this neglected but nutritious plant is becoming an important cash crop.

Because it is now a good earner, farmers want to know how they can get the best yields of amaranth. A study carried out in the western part of Kenya, has shown that planting amaranth with soybean, both increases fresh leaf yields and improves the quality of the soil.

Talking with **Pius Sawa** at an international symposium on neglected plant species in Arusha, Tanzania, is Marion Nduta Ng'ang'a from Moi University in western Kenya. She begins by explaining that amaranth in Kenya has a long, long history...

Track 7

In	"We introduce amaranth..."
Out	... the market price is quite fair."
Duration	3'11"

Suggested closing announcement:

That was Marion Nduta Ng'ang'a talking about the bright future for amaranth in Kenya with Pius Sawa. There are many other crops like amaranth that are still neglected, not only in Kenya but the world over.

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Transcript

Ng'ang'a We introduce amaranth because it has been there from time immemorial but a lot of people do not know the goodness of these vegetables.

Sawa *Tell me a little bit about amaranth, what are its qualities and what does it exactly do to a consumer?*

Ng'ang'a Amaranth is a very old crop and originally it existed in Mexico but it was used for human sacrifice rituals, so it was banned until around 1972, when it gained a lot of interest in America.

Sawa *It sounds interesting because amaranth in most parts of the country are counted as weeds?*

Ng'ang'a Now most people do not know about the grain amaranth, they only know about the weedy types that grow in cattle sheds when it rains and they do not take it seriously because they say it is

consumed by the poor. But recent improvement has been done on this existing vegetable or weedy amaranth by the Kenya Seed Company and now we have a new variety called *Amaranthus dubius* that produces grains as well as leaves. Amaranth is a very important crop especially in the health field for women and children, and it matures very fast. Within two to three months you have your crop ready. And the most interesting bit is that the more you pick the leaves the more the plant generates these leaves. So you have a long harvesting period.

Sawa *So by intercropping amaranth with the soybeans, do you think you think are trying to put in some value so that people can appreciate its use?*

Ng'ang'a The reason as to why we are intercropping is because, being a new crop we are promoting, we cannot ask the farmers to stop planting other crops and plant amaranth. So the idea of intercropping is just to make sure the farmer has their ordinary crop as well as trying out our new amaranth variety. Apart from harvesting a single crop in a season, you will harvest two crops and you will harvest amaranth a month before soybean matures, and that will increase the income level in the household, thus reducing poverty.

Sawa *Do you like amaranth – do you eat it?*

Ng'ang'a Of course I do eat it! Among all almost all indigenous vegetables, it is among the best because it is not bitter. It is very soft, especially for people who are ailing or have sores in the mouth.

Sawa *How do you like it cooked?*

Ng'ang'a It is very easy to cook, you just steam for five minutes, just like spinach. It doesn't take a long time to cook, you can steam or boil or fry, just stir fry.

Sawa *So in summary you are saying amaranth is helpful in fighting poverty, in helping malnutrition.*

Ng'ang'a Yes of course amaranth is high value, it is dual purpose. You can pick leaves for a long period of time and eventually harvest grains. These leaves are highly nutritious, the grains are super nutritious and also the market price is quite fair. *End of track.*

Even more potential

Improving the varieties

Omary Ijumaa

Research Assistant, World Vegetable Centre (AVRDC), Arusha, Tanzania



Lazarus Laiser

Suggested introduction

Often we think that agricultural research centres are full of the latest crops and solutions to our farming problems. But at the World Vegetable Centre they are devoting a lot of space and effort to ancient African crops.

Amongst the plots of traditional leafy vegetables **Lazarus Laiser** came across Omary Ijumaa, a research assistant, at work as usual. So he asked Omary to explain what he now knows of our forgotten crops and how he shares it with others who come to visit.

Track 8

In "These are African vegetables..."
Out "... and you increase your income."
Duration 3'25"

Suggested closing announcement:

Omary Ijumaa, a research assistant at the World Vegetable Centre in Arusha, Tanzania, where new and improved varieties of traditional African crops are being developed.

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Transcript

- Ijumaa** These are African vegetables which have, for a long time, been forgotten. Sometimes they call them underutilised species. They have been forgotten, but they are important for nutrition, health and for food.
- Laiser** *Which do you have here in AVRDC?*
- Ijumaa** The neglected indigenous vegetables we have are African eggplant, we have species like moringa, we have nightshade, we have okra, and some other species like spider flower.
- Laiser** *You yourself being here, what have you seen in development, and in developing and also promoting indigenous vegetables?*
- Ijumaa** OK, we have come up with new varieties for indigenous vegetables. We have also come up with improved varieties, which we have improved the characteristics in terms of yield and adaptability to the environment.
- Laiser** *Are they easy to grow and mix with other crops, these indigenous vegetables?*

- Ijumaa** Yes, the vegetables, especially these indigenous vegetables, are easy and actually when we intercrop with other crops, for instance, when we use indigenous vegetables which are legumes, like vegetable cowpea and vegetable soya bean, they are good because they improve on the soil fertility, since they add nitrogen to the soil, and therefore if you mix with other crops you will improve on the fertility and other crops will be high yielding.
- Laiser** *So you are saying it is easier to grow because you can even grow other crops beneath this indigenous vegetable?*
- Ijumaa** Yes it is easy when you intercrop.
- Laiser** *Which benefits to the community have you seen while working here?*
- Ijumaa** Yes while working here at the World Vegetable Center, we have tried to train farmers and also we have helped to promote the consumption of African indigenous vegetables for nutrition, and public awareness for our communities about the presence of the vegetables and their importance.
- Laiser** *So people were able to turn up, the farmers?*
- Ijumaa** Yes, farmers they normally turn up in groups. We normally organise groups to come up, farmer groups, for training.
- Laiser** *Here you are being paid to work with these indigenous vegetables. What about your homeland and eating them regularly?*
- Ijumaa** Yes, we normally eat them as part of the menu on a daily basis as part of our diets.
- Laiser** *So have you started any garden at home?*
- Ijumaa** I have been doing some farming like I have a farm where I have been growing for commercial, as a private business.
- Laiser** *What advice do you have for other farmers in Tanzania and generally in Africa?*
- Ijumaa** Actually I would advise farmers in Tanzania and generally in Africa, to get involved in vegetable production because they are a cheap source of income, food; in other words people can cultivate them easily and cheaply. They do not involve high cost but you can use low cost and get good production and you increase your income. *End of track.*

Even more potential

The farmer's view

Ndelifose Johnny Nanyaro
Farmer, Nambala village, Arusha,
Tanzania



Lazarus Laiser

Suggested introduction

What are the secrets of staying healthy? Eating a balanced diet is definitely one of the most important. At a recent conference in Arusha, Tanzania, delegates have been discussing some of the world's forgotten foods – vegetables, nuts and fruits that are no longer widely grown. Many of these crops are extremely nutritious. Green leafy vegetables like nightshade, for example, contain high levels of iron and vitamins.

Mama Ndelifose Nanyaro is a farmer who lives in Nambala village, not far from Arusha. She spoke to **Lazarus Laiser** about how growing indigenous African vegetables has helped to make her life better.

Track 9

In "Right now I am standing in a garden ...
Out ...just from this small garden."
Duration 1'51"

Suggested closing announcement:

The youthful Ndelifose Nanyaro, a strong advocate for the benefits of eating and growing indigenous vegetables.

Transcript

Laiser *Right now I am standing in a garden which is situated in Usa, it is Nambala village, and with me is the farmer who is just practising these kind of indigenous vegetables. I can see that there is pigeonpea, I can also see the eggplant and also I can see okra and other things. I just want to know why you chose to grow these indigenous vegetables?*

Nanyaro (Vernac) I decided to start this farming because it has a lot of benefits. It is easy and I inherited it from my parents. We have been eating these from childhood. I am familiar with it.

Laiser *Which type of indigenous fruits or indigenous vegetables do you grow?*

Nanyaro (Vernac) I have okra, nightshade, eggplant, cowpeas, cassava, pumpkins, yams.

Laiser *And I can see that you have got a lot of benefits, as I can see you have built a modern house. I can also see that you are healthy, so I assume that may be because of these indigenous vegetables?*

Nanyaro (Vernac) I am healthy in my family, I look young as you can see me. I am 60 years but I look young and strong. My daughter is 38 years but she looks very young. I can serve my children well. I can do my own work, I am not a beggar. I pay school fees for my children by my own. In case of sickness I can just take my

children to hospital without any problem, just from this small garden. *End of track.*

Even more potential

The market for underutilised crops

Patrick Van Damme and Koublan Edmond Koffi



Rose Reuben

Suggested introduction

Take a look at the international market and you will see that several of the world's neglected or underutilised crops are making a comeback.

Whether for their leaves, fruits, tubers or roots, we are rediscovering niche markets for these long-forgotten plants, and farmers are making money from supplying the demand. Some are sold fresh. Others are processed into nutritious foods while others are used for their medicinal properties, that ease some of the symptoms of the problem diseases of our time.

So how can we know what the market wants? **Rose Reuben** met two marketing specialists from two parts of the world. Professor Patrick Van Damme is based in Belgium and Koublan Edmond Koffi works in Cote d'Ivoire. Rose began by asking them both for examples of new markets for old crops.

Track 10

In	"There are a lot of plants ...
Out	... will be much more diversified."
Duration	4'35"

Suggested closing announcement:

Professor Patrick Van Damme and Koublan Edmond Koffi were discussing the market prospects for some of Africa's neglected crops with Rose Reuben.

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Transcript

Damme

There are a lot of plants that have been used and are still used by traditionally living people in Namibia. Some of them have also made it into a real crop status because they are grown, but that is only a few.

Reuben

What about in Cote D'Ivoire?

Koffi

In Cote D'Ivoire let's say you can divide the crop species into two kinds. We have leafy vegetables that are annual crops and we have also perennial crops that are mainly used for fruits and the leaves. And on this point let's say that all of the tree crops are most of the time in the landscape, they are not cultivated, they are not domesticated but product obtained from these trees are

subject of trade in the country and out of the country in the sub region of West Africa.

Reuben *Can you mention a few of the neglected plants or crops in Namibia?*

Damme There is one important one, Devil's claw it is called, for which there is a market in Germany amongst others. Now this is a plant that grows very slowly because we are talking about a desert kind of environment. It grows very slowly and they want to harvest the roots eventually, so that would kill the plant. So they are harvesting those from the wild. There is this idea that this plant should be grown but when you start growing it, it grows very slowly. So if you start the plantation now you will only reap the benefit in a few years time. So that takes a lot of time and people now, there is a market and they have jumped onto the opportunity and they are harvesting and maybe they are even over-harvesting it. Apart from that there are a few plants here and there that have maybe some medicinal properties and that would have a regional importance.

Reuben *So do you think these crops and plants which are neglected, could they be coming back to the fashion?*

Koffi Yes obviously there is a public awareness to our population and according to the high register of nutrient in these crops, people are now getting interested to these crop species and namely in leafy vegetables. We have a lot of leafy vegetables that in the past were used by our population and these leafy vegetables are used in many diets. Now the constraint is that the young people have not the habit of this diet and it is critical to introduce these neglected crops in the habit of the young people to maintain the use of these neglected crops. And to talk about the tree crops, the dry leaves also are sold on many markets and the fruits of the shea tree and the butter are also sold for food and for pharmaceutical industries.

Reuben *Professor Van Damme, what are the challenges that you are meeting in promoting these neglected crops and plants?*

Damme The international agricultural research has always promoted species and varieties therein of just a limited number of crops and so people have grown accustomed to that fact and now what you find on your platter is a very limited number of species that are actually used. There is also private sector interest but sometimes the policy environment is not an enabling one.

Koffi One of the main challenges is public awareness because many scientific results show that these crops are very, very rich in vitamins and minerals and micronutrients and these results are not known by population. So they have to be aware of that. And the second step, most of the time research activities are not reported to the world's people and they do not know what is going on in research. And the third step is towards politicians. As I said, policy decision makers have to be involved in the process of putting forward this information.

Damme Also you should know that I think the resilience of a system depends on having a number of different crops, a number of different activities. Hopefully by 2020, 2030, the kind of diet we will live on will be much broader, will be much more diversified.
End of track.